

THE BLACK DIAMOND

COAL

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12/7/43

SUMMARY

Coal, the base of modern industry, carried through its beginnings, formation, discovery and availability.

It is taken from the time it was merely animal matter and vegetation more than three-hundred-million years ago, from stage to stage until it reached its present form.

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Coal, the black diamond, together with iron, are the bases of modern industry. A nation's coal supply measures today that nation's chance for success in the international struggle for industrial supremacy. Where does this coal come from? How does it develop? The anthracite region of Pennsylvania can give us the answers.

This huge "layer cake" covers eight counties and nearly five hundred square miles. There are fourteen separate layers of this hard, black substance which has been developing for nearly two hundred and fifty years, million years.

Back then, human beings could not have lived, for the atmosphere contained so much carbonic gas that it would have been poisonous to human beings. Only great scaly trees and fern-like plants filled the swamps with a thick tangled growth. This vegetation, by being alternately flooded with sunshine and drenched with warm rains, was changed into vast quantities of carbon--the chief element of coal.

Then came a time when the earth's surface was depressed. Over the bed of decayed vegetation flowed the ocean bringing rocks and sand. Volcanoes blew clouds of dust and ash into the air to settle slowly on land and water. All of these deposits formed layers which hardened into slate and sandstone. Thus was formed the first layer of the gigantic cake covering Eastern Pennsylvania.

Fourteen times the same process happened. Forest grew, died and were buried while the Earth was still young.

Then the earth's surface began to contract and this region was twisted and crumbled. Warping and folding, the region finally broke under the strain and the Allegheny Mountains rose above the plains. The coal beds, held under terrific pressure, were flattened and fractured. The heat became so intense that the soft coal gave off its gases and became harder and harder forming anthracite.

The second coal-forming period, the Cretaceous, began seventy five to one hundred million years ago in the region now known as Colorado, Wyoming and adjacent states. It was a vast swamp frequented by dinosaurs. This period yields soft coal since it is younger and less compression has taken place.

The most recent coal forming swamp deposits were in existence during the age of Mammals, thirty to sixty million years ago. A brown coal or lignite that burns with a sooty flame and a strong odor is of this period. It is extensively mined in north Germany where beds of seventy five to one hundred and fifty feet thick are known.

The first record of the use of coal dates back to three hundred years before Christ when a Greek philosopher named Theophrastus wrote about black stones which burned like charcoal. He called them "anthraces" the word from which anthracite is derived.

The early Romans discovered the coal fields of England

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